REMARKS

The above changes to the claims have been made to delete multiple dependency of the claims, to round out the scope of patent protection being sought, and generally to place the claims in better conditions for examination on the merits. These amendments correspond to amendments made and entered in the parent application, U.S. Patent Application No. 09/889,229, and thus do not present any prohibited new matter.

Applicants request that this application be prosecuted in the United States while using Claims 1 to 19 that were submitted on March 7, 2001 during the international phase of examination, as further amended herein.

Early allowance of claims 1-20 is earnestly solicited.

In the event any further fees are due to maintain pendency of this application, the Examiner is authorized to charge such fees to Deposit Account No. 02-4800.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: October 28, 2003

By: _____
Deborah H. Yellin
Registration No. 45,904

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

AMENDED CLAIMS

1. A method of producing molecularly imprinted microspheres comprising specific binding sites, c h a r a c t e r i s e d by polymerising functional monomers and crosslinkers in a reaction solvent in the presence of print molecules as templates in a surfactant-free precipitation polymerisation process, which print molecules are capable of forming non-covalent or reversible covalent interactions with said functional monomers.

2. A method according to claim 1, wherein the total volume of polymerisable monomers and crosslinkers is kept in the range of about 0.01 to 20 % of the volume of the reaction solvent.

3. A method according to claim 1 or 2, wherein the reaction solvent is aqueous or non-aqueous.

4. A method according to claim 1 or 1, wherein said reaction solvent is composed of a single solvent component or of multiple solvent components.

5. A method according to claim 1, wherein said functional monomers have the same functionality.

6. A method according to claim 1, wherein said functional monomers have different functionality.

7. A method according to claim 1 or 2, wherein the solubility of the print molecules in the reaction solvent is adjusted by changing the composition of the reaction solvent.

8. A method according to claim 1, wherein the polymerisation is induced by heat, UV radiation, γ radiation and/or chemically.

9. A method according to claim 1, wherein said polymerisation process is a free-radical polymerisation process, an ionic polymerisation process, a coordination polymerisation process or a step growth polymerisation process.

10. A method according to claim 1 or 2, wherein a desired size of the microspheres is achieved by controlling the nucleation and particle growth process.

11. A method according to claim 10, wherein the control of the nucleation and particle growth process is achieved by adjusting the composition of the functional monomer/crosslinker/solvent system and/or the reaction conditions during the polymerisation in order to change the solubility of the growing polymer chains.

12. A method according to claim 10, wherein the control of the nucleation and particle growth process is such as to avoid aggregation of the microspheres.

13. A method according to claim 1 or 2, wherein the size of the microspheres as produced is in the range of 0.01-10μm.

14. A method according to claim 1 or 2, wherein the reaction conditions are controlled so that the microsperes become monodisperse.

15. Use of the molecularly imprinted microspheres as prepared according to any one of claims 1-14, for screening of chemical libraries, for catalysis, for facilitating synthesis, for analyte determination using ligand binding assays and/or agglutination assays, for therapeutic purposes, or for controlled release.

16. Use of the molecularly imprinted microspheres as prepared according to any one of claims 1-14, as stationary phase or modifier in capillary electrophoresis, capillary electrochromatography or HPLC analysis.

17. Use of the molecularly imprinted microspheres as prepared according to any one of claims 1-14, as recognition component in biomimetic sensors.

18. Use of the molecularly imprinted microspheres as prepared according to any one of claims 1-14, as affinity-labelled probe for targeting cells or other biological material.

19. Use of the molecularly imprinted microspheres as prepared according to any one of claims 1-14, as binding entities for the preparation of composite materials.